

NEAQS 2004

**Meteorological summary for Gulf of Maine and northern coastal New
England**

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General

Low level winds shifted from SSW to SW but remained relatively strong (15-20 kts) near shore. Fog was present again in the Gulf of Maine. Mid- to high-level cloud was present over the coast and Gulf.

Soundings from the ship at 0500, 1100, 1700, and 2300 UTC showed a strongly statically stable marine boundary layer ~100 m deep. A near-neutral intermediate layer above extended up to a sharp inversion at ~700 m in the 0500 UTC sounding only. Winds aloft were more westerly than near the surface.

Sounding winds	0500 UTC	1100 UTC	1700 UTC	2300 UTC
100 m speed, m/s	10.6	10.0	11.7	12.5
100 m direction	230	210	215	220
500 m speed	18.0	13.7	11.7	9.8
500 m direction	240	245	240	250
1000 m speed	19.5	15.9	12.4	9.4
1000 m direction	250	255	250	270
2000 m speed	16.1	16.9	14.2	9.6
2000 m direction	235	235	240	255

Ozone and CO

Ozone and CO were low at the ship. There was a broad peak of ozone ~35-40 ppb between 16 and 22Z. Footprints suggest that there should have been urban influence at the ship throughout the day.

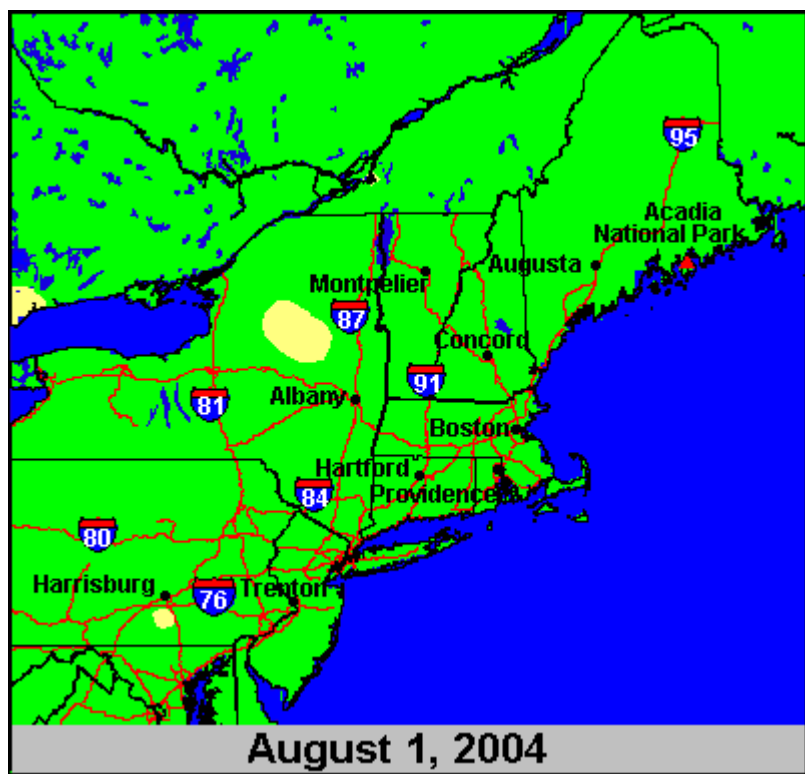


Figure 1: Maximum 1-h surface ozone from EPA AIRNOW

Footprints

Footprint S-R-Relationship for flight RHB_cruise2

Start time of sampling 20040801.173401 End time of sampling 20040801.180601

Lower release height 0 m Upper release height 30 m

Meteorological data used is 1x1 deg ECMWF analyses

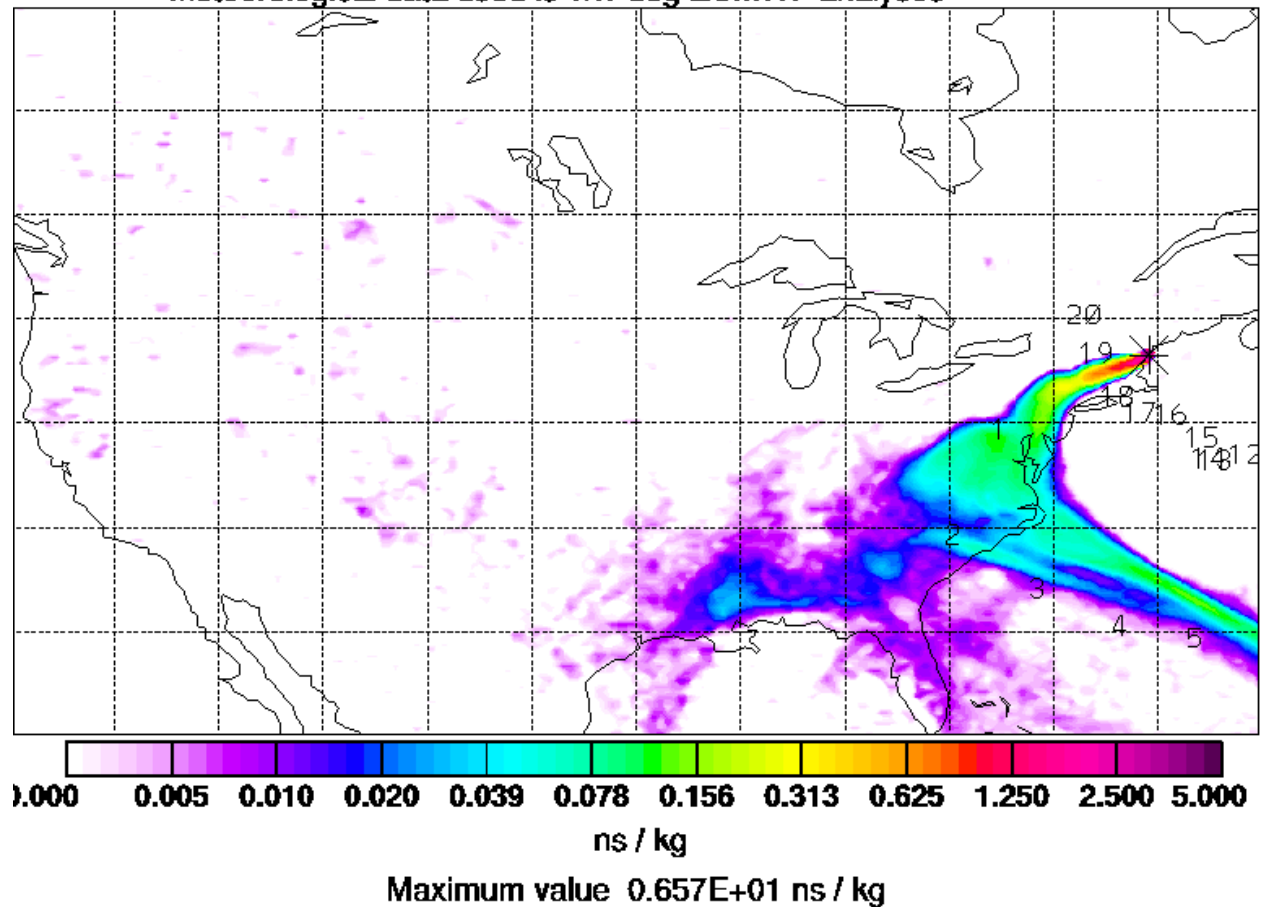


Figure 2: FLEXPART footprint for 1734-1806 UTC 1 August

Ship track

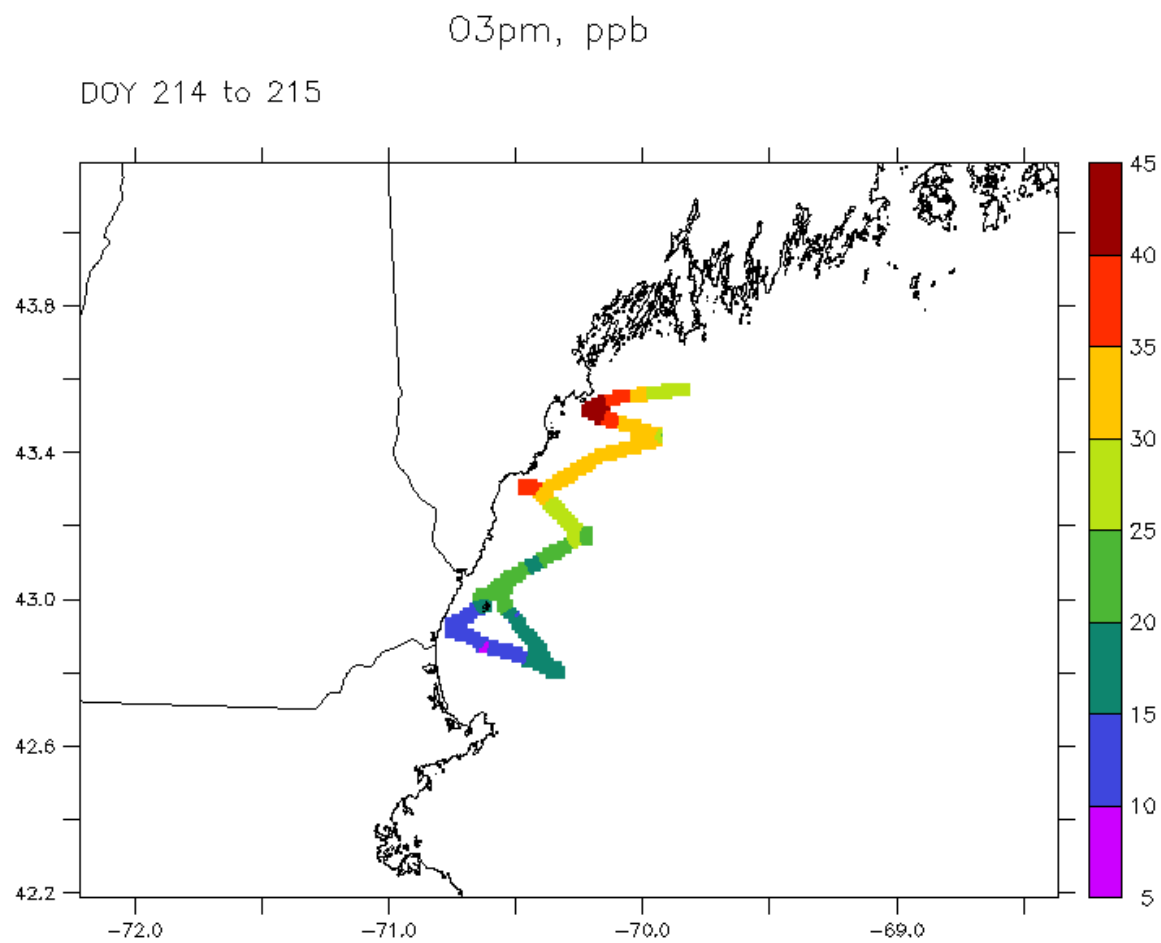


Figure 3: Ozone along the ship track

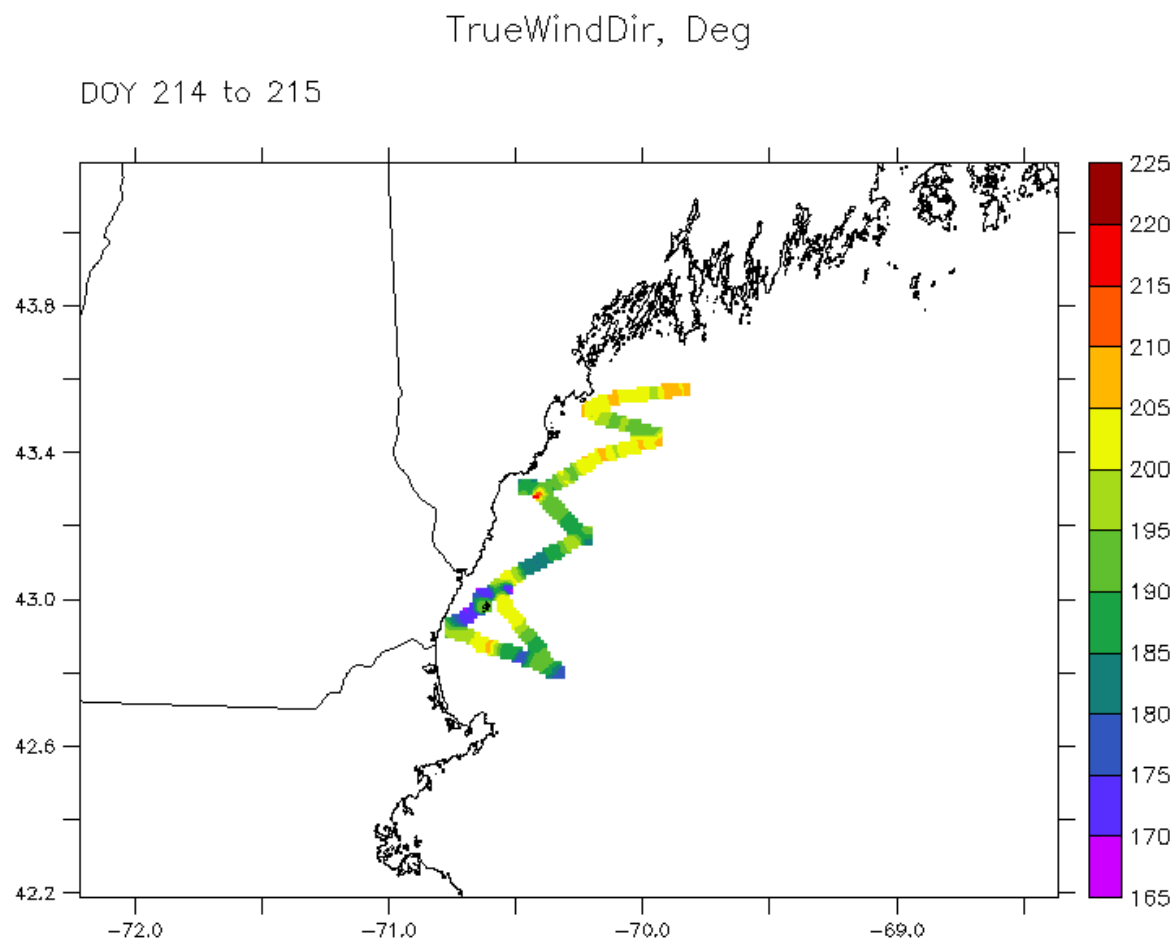


Figure 4: Wind direction along the ship track